CUSTOMER NO.: 24498

PATENT
Atty. Dkt. No. PU020019

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: Ronald L. Blair

Serial No.: 10/087,002

Confirmation No.: 6287

Filed: March 01, 2002

For: **AUDIO FREQUENCY SHIFTING DURING VIDEO TRICK MODES**

§
§
§
§
§
§
§
§
§
§
§
§

Group Art Unit: 2621

Examiner: Heather Rae Jones

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING
37 CFR 1.8
I hereby certify that this correspondence is being deposited on 5/30/07 with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

May 30, 2007
Date

Filli Karwoski
Signature

APPEAL BRIEF

Dear Sir:

Appellant submits this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2621 dated December 13, 2006, finally rejecting claims 1-18.

Table of Contents

Real Party in Interest

The real party in interest is Thomson Licensing.

Related Appeals and Interferences

Appellant asserts that no other appeals or interferences are known to the Appellant, the Appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1-18 were originally presented with the filed application. The Appellant's claims 1-2 and 10-11 were amended in prosecution to more clearly define the invention of the Appellant to distinguish the invention of the Appellant over cited art. All other claims remain unamended. The Appellant's claims 1-2, 8-11, 17 and 18 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by Suito et al. (US Patent No. 6,925,340, hereinafter "Suito"). In addition, the Appellant's claims 3-7 and 12-16 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Suito in view of Shimura (US Patent No. 6,658,197).

Status of Amendments

A first response was filed on September 26, 2006 to overcome a First Office Action dated July 03, 2006. In the First Office Action, the Examiner rejected the Appellant's claims 1-2, 8-11, 17 and 18 under 35 U.S.C. § 102(e) as being anticipated by Suito et al. (US Patent No. 6,925,340, hereinafter "Suito"). The Examiner further rejected the Appellant's claims 3-7 and 12-16 under 35 U.S.C. § 103(a) as being unpatentable over Suito in view of Shimura (US Patent No. 6,658,197). In the response filed on September 26, 2006, the Appellant amended claims 1-2 and 10-11 to more clearly define the invention and set forth arguments traversing the rejections issued by the Examiner and distinguishing the Appellant's invention over the cited prior art.

A second response was filed on February 21, 2007 to overcome a Final Office Action dated December 13, 2006. In the Final Office Action, the Examiner again rejected the Appellant's claims 1-2, 8-11, 17 and 18 under 35 U.S.C. § 102(e) as being anticipated by Suito and rejected the Appellant's claims 3-7 and 12-16 under 35 U.S.C. § 103(a) as being unpatentable over Suito in view of Shimura. In the response filed on February 21, 2007, the Appellant set forth further arguments traversing the rejections issued by the Examiner and distinguishing the Appellant's invention over the cited prior art.

The Examiner responded to the Appellant's response of February 21, 2007 with an Advisory Action dated March 22, 2007. In the Advisory Action, the Examiner indicated that the response dated January 02, 2007 does NOT place the application in condition for allowance because all arguments fail to be persuasive. In response to the Advisory Action dated March 22, 2007, the Appellant submitted a Notice of Appeal dated April 09, 2007.

The claims on appeal are those contained presented in the Appellant's response filed on September 26, 2006, which are the same as in the Appellant's response filed on February 21, 2007. That is, the claims on appeal are the Appellant's claims 1-18, which are listed in the attached Claims Appendix.

Summary of Claimed Subject Matter

The invention of the Appellant provides a method and apparatus for improved audio content playback during video trick modes. The Appellant teaches that in various embodiments, the trick mode can be a playback speed that is faster or slower than normal play speed. The coded digital data comprises video programming with corresponding audio content. The Appellant teaches that in one embodiment of the invention, a decoder decodes from a portion of the digital data comprising the audio signal a plurality of digital audio samples corresponding to a selected portion of the video programming. The decoder repeats or drops selected ones of the audio samples at a rate approximately corresponding to a selected trick mode video playback speed of the video programming. A digital to analog converter then generates an audio playback signal corresponding only to a remaining set of the audio samples. The audio samples can be dropped at a rate of approximately one every n samples, where n is equal to the selected trick mode playback speed relative to a normal playback speed. In order to compensate for the dropped audio samples, the audio processor preferably shifts the playback audio pitch by a factor of approximately 1/n. Similarly, the audio samples can be repeated 1/n times, where n is equal to the selected trick mode playback speed relative to a normal playback speed. In order to compensate for the additional audio samples, the audio processor key shifts the playback audio pitch by a multiplying factor of approximately 1/n.

As suggested in MPEP 1206, the Appellant now reads at least two of the broadest appealed claims on the specification and on the drawings. It should be understood, however, that the appealed claims may read on other portions of the specification or other figures that are not listed below.

The Appellant's Specification specifically refers to FIG. 1 and FIG. 3 for teaching an apparatus for implementing the various advanced operating features in accordance with the inventive arrangements. The Appellant teaches that Figure 1 is a block diagram of an exemplary DVD video player in which the present invention may be implemented. The device 100 is capable of reading from the disc medium, in this example, a rewritable DVD 102. The device comprises a mechanical assembly 104, a control section 120, and a video/audio output processing path 170. The Appellant teaches that the apparatus of the invention includes a control section 120 which comprises a control central processing unit (CPU) 122 and that a servo

110 can also be considered part of the control section. The Appellant further teaches that suitable software or firmware is provided in memory for the conventional operations performed by control CPU 122 and that program routines for the advanced features 136 are provided for controlling CPU 122 in accordance with the invention. In addition, it is taught that a separate buffer 136 can be provided to implement other advanced playback functions, including control over trick mode playback and that such trick mode playback modes can include forward and reverse playback speeds other than standard 1X playback.

The Appellant further teaches that the player of FIG. 1 can also include a karaoke processor 186 under the control of CPU 122 for performing audio frequency shifting during video trick modes. The karaoke processor 186 receives from the audio decoder 184 digital audio corresponding to a selected video performance that is being played. In standard, non-trick playback modes, the karaoke processor can remain inactive and the audio D/A 184 can process digital audio received from the audio decoder 184. When a trick mode playback has been selected, however, the audio D/A can be configured to receive specially processed digital audio from the karaoke processor. The Appellant teaches that such a processor is used for adjusting the pitch (or audio frequency) of, for example, music to more closely match the pitch of the singer, without changing the tempo of the music.

The Appellant refers to FIG. 3 for providing an exemplary block diagram useful for understanding the operation of a key control block 300 of a karaoke processor 186. As depicted in Figure 3, input audio can be split between high and low pass processing paths established by high pass filter 302 and low pass filter 304. The high pass path processes tempo/beat information whereas the low pass path processes audio voice and accompaniment information. The low pass path is sampled by A/D converter 306 running at a clock rate F_A. Clock rate F_A is preferably at least 10X the highest expected input audio frequency. The sampled low pass frequency components are then placed in a memory storage such as RAM 308. Digital-to-analog converter 310 reads data from RAM 308 at a desired output rate F_B where:

$$\text{Key shift} = \text{Log}_2 (F_B/F_A)$$

For example, if $F_B = 2F_A$, then the pitch is one octave higher. A low pass filter 312 is also provided to remove clock noise and harmonics. A gain adjust unit can also be provided to produce a desired audio output level. Finally, the high and low pass

audio signals are summed together in block 316 to provide an output. This approach has been found to work fairly well where the F_A and F_B are much greater than 10X the audio bandwidth.

With reference to FIG. 2, the Appellant teaches an embodiment of a method for audio content playback during video trick mode playback in accordance with the Appellant's invention. More specifically, the Appellant teaches that at step 200 the player is operated in a playback mode. In step 202, the control CPU 122 monitors user inputs from, for example, the advanced features buffer 136. In step 204, the control CPU 122 checks to determine whether the trick mode fast forward playback speed is selected. If so, then a trick mode fast forward playback has been selected by the user and the control CPU can continue on to steps 206 through 212 for trick mode playback.

In step 206, the control CPU 122 reconfigures packet video decoder 178 to perform trick mode video playback at speed *n*X where *n* is equal to the selected trick mode playback speed relative to a normal playback speed. For example, for a playback speed two times faster than normal, then $n = 2$. The Appellant teaches that in one embodiment of the Appellant's invention, to achieve fast forward trick mode, the packet video decoder drops certain decoded pictures. For example, every other picture to be displayed can be dropped in the case of 2X playback.

The Appellant teaches that in step 208, the control CPU 122 can configure the audio decoder 182 to drop audio samples at a rate of every *n* samples. Dropping audio samples in this manner has the advantageous effect of speeding up the audio to match the speed of the video. However, if the remaining audio samples were simply passed to the audio D/A 184 for subsequent conversion to analog format, then the result would be a key shift in the audio by a factor of *n*. This key shift will cause voices to be high pitched and difficult to understand. Accordingly, the Appellant teaches that in one embodiment, the digital audio output from the audio decoder 182 is pre-processed in the karaoke processor 186.

As such, in step 210, the control CPU advantageously selects the karaoke processor 186 as the input for audio D/A 184. The karaoke processor receives digitized audio from the audio decoder 182 and pre-processes such audio for more natural sound. In step 212 the control CPU 122 can selectively configure the key control function of karaoke processor 186 to shift the audio key or frequency by 1/*n*.

In particular, by utilizing the key control function of the karaoke processor, the key or pitch of the digitized audio can be shifted down by a factor 1/*n* to compensate for the selective elimination of every *n* audio samples in the audio decoder 182. Moreover, since the karaoke processor preferably shifts the audio pitch without altering the tempo or rate of the audio, spoken words associated with the video presentation will be played back more rapidly due to the selective elimination of audio samples but will have a relatively normal pitch.

In step 214, the trick mode playback is performed with the player 100 configured as described with the processed audio data decoded at step 215 and converted to an analog signal at step 217. At step 216, the control CPU 122 periodically checks advanced feature processor 136 to determine whether fast forward playback mode has been terminated. If it has not, then the control CPU 100 returns to step 214 and continues trick mode playback. If the user has commanded that the trick mode playback be discontinued, then the process returns to step 202.

However, if in step 204, the control CPU 122 determines that trick mode fast forward playback speed has not been selected, the method proceeds to step 218. In step 218, the control CPU checks to see if a slow forward playback speed has been selected. If so, then in step 220 the control CPU configures packet video decoder 178 for trick mode playback at a speed *n*X. Note that in this case, *n* will be a fractional value, for example 1/2, indicating that playback is to proceed at one half the normal speed. In step 222, the audio decoder 182 is configured to repeat each audio sample 1/*n* times. In the case where *n* is 1/2, each audio sample will be repeated two times. The process then continues on to step 210 as already described above.

For the convenience of the Board of Patent Appeals and Interferences, Appellant's pending claims are presented below in claim format with elements read on the drawings and appropriate citations to at least one portion of the specification for each element of the appealed claims (with reference numerals added).

Claim 1 positively recites (with reference numerals added, where applicable):

> 1. A method for audio content playback during video trick mode playback, comprising:

reading (200) coded digital data from a storage medium, said coded digital data comprising a video programming and corresponding audio programming;

decoding (220, 206) from a portion of said digital data comprising said audio programming a plurality of digital audio samples corresponding to a selected portion of the video programming;

repeating (222) or dropping (208) selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming; and

key shifting (212) a playback audio pitch associated with said audio samples to compensate for said trick mode playback. (See Appellant's specification, page 7, line 1 through page 9, line 2).

Claim 2 positively recites:

2. The method according to claim 1, further comprising generating (217) an audio playback signal corresponding only to a remaining set of said audio samples. (See Appellant's specification, page 8, lines 17-19).

Claim 3 positively recites:

3. The method according to claim 2, wherein said audio samples are dropped (208) at a rate of every n samples, where n is equal to the selected trick mode playback speed relative to a normal playback speed. (See Appellant's specification, page 7, lines 27-28).

Claim 4 positively recites:

4. The method according to claim 3, wherein said key shifting step (212) further comprises shifting said playback audio pitch by a factor of approximately $1/n$. (See Appellant's specification, page 8, lines 7-9).

Claim 5 positively recites:

5. The method according to claim 1, further comprising repeating (222) selected ones of said audio samples at a rate inversely proportional to a selected trick mode video playback speed of said video programming to produce a trick mode set of audio samples; and

generating an audio playback signal (217) corresponding to said trick mode set of said audio samples. (See Appellant's specification, page 8, lines 25-32).

Claim 6 positively recites:

6. The method according to claim 5, wherein said audio samples are repeated (222) 1/n times, where n is equal to the selected trick mode playback speed relative to a normal playback speed. (See Appellant's specification, page 8, lines 25-32).

Claim 7 positively recites:

7. The method according to claim 6, wherein said key shifting step (212) further comprises shifting said playback audio pitch by a multiplying factor of approximately 1/n. (See Appellant's specification, page 8, lines 7-12).

Claim 8 positively recites:

8. The method according to claim 1 wherein said storage medium (102) is selected from a group consisting of a DVD, a magnetic hard disk, magneto optical disk and a video CD. (See Appellant's specification, page 3, lines 26-32).

Claim 9 positively recites:

9. The method according to claim 1, wherein said coded digital data is an MPEG format and said reading step further comprises decoding (215) an MPEG bit stream to obtain said audio samples. (See Appellant's specification, page 5, lines 8-12, and page 3, lines 23-25).

Claim 10 positively recites:

10. Apparatus for audio signal playback during video trick mode playback, comprising:

a storage medium reader (108) for reading coded digital data from a storage medium (102), said coded digital data comprising a video signal and a corresponding audio signal;

a decoder (178) for decoding from a portion of said digital data comprising said audio signal a plurality of digital audio samples corresponding to a selected portion of the video signal and for repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video presentation; and

an audio processor (186) for key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback. (See Appellant's specification, page 4, line 1 through page 6, line 3).

Claim 11 positively recites:

> 11. The apparatus according to claim 10, further comprising a digital to analog converter (184) generating an audio playback signal corresponding only to a remaining set of said audio samples. (See Appellant's specification, page 5, lines 10-12).

Claim 12 positively recites:

> 12. The apparatus according to claim 11, wherein said audio samples are dropped at a rate of every n samples, where n is equal to the selected trick mode playback speed relative to a normal playback speed. (See Appellant's specification, page 7, lines 27-28).

Claim 13 positively recites:

> 13. The apparatus according to claim 12 wherein said audio processor shifts said playback audio pitch by a factor of approximately 1/n. (See Appellant's specification, page 8, lines 7-9).

Claim 14 positively recites:

> 14. The apparatus according to claim 10, wherein said decoder (182) repeats selected ones of said audio samples at a rate inversely proportional to a selected trick mode video playback speed of said video presentation to produce a trick mode set of audio samples; and
>
> a digital to analog converter generating an audio playback signal corresponding to said trick mode set of said audio samples. (See Appellant's specification, page 8, lines 25-32).

Claim 15 positively recites:

> 15. The apparatus according to claim 14 wherein said audio samples are repeated 1/n times, where n is equal to the selected trick mode playback speed relative to a normal playback speed. (See Appellant's specification, page 8, lines 25-32).

Claim 16 positively recites:

> 16. The apparatus according to claim 15 wherein said audio processor shifts said playback audio pitch by a multiplying factor of approximately 1/n. (See Appellant's specification, page 8, lines 7-12).

Claim 17 positively recites:

> 17. The apparatus according to claim 10 wherein said storage medium is selected from the group consisting of a DVD, a magnetic hard disk, magneto optical and a video CD. (See Appellant's specification, page 3, lines 26-32).

Claim 18 positively recites:

> 18. The apparatus according to claim 10 wherein said coded digital data is arranged in an MPEG format and said storage medium reader decodes an MPEG bit stream to obtain said audio samples. (See Appellant's specification, page 5, lines 8-12, and page 3, lines 23-25).

Grounds of Rejections to be Reviewed on Appeal

1. Whether the Appellant's claims 1-2, 8-11, 17 and 18 are patentable under 35 U.S.C. § 102(e) over Suito et al. (US Patent No. 6,925,340, hereinafter "Suito").

2. Whether the Appellant's claims 3-7 and 12-16 are patentable under 35 U.S.C. § 103(a) over Suito in view of Shimura (US Patent No. 6,658,197).

2. Pending claims 1-2, 8-11, 17, 18 and 3-7, 12-16 have been grouped together, respectively, by the Examiner in their rejection. Appellant urges that each of the rejected claims stands on its own recitation, the claims being considered to be separately patentable for the reasons set forth in more detail *infra*.

ARGUMENT

I. THE EXAMINER ERRED IN REJECTING CLAIMS 1-2, 8-11, 17 AND 18 UNDER 35 U.S.C. § 102 BECAUSE THE CITED REFERENCE FAILS TO ANTICIPATE AT LEAST A METHOD AND APPARATUS FOR PLAYING AN AUDIO TRACK DURING VIDEO TRICK MODE PLAYBACK OF A VIDEO PRESENTATION INCLUDING "REPEATING OR DROPPING SELECTED ONES OF SAID DIGITAL AUDIO SAMPLES AT A RATE CORRESPONDING TO A SELECTED TRICK MODE VIDEO PLAYBACK SPEED OF SAID VIDEO PRESENTATION" AND "KEY SHIFTING A PLAYBACK AUDIO PITCH ASSOCIATED WITH SAID AUDIO SAMPLES TO COMPENSATE FOR SAID TRICK MODE PLAYBACK".

A. 35 U.S.C. § 102(e) - Claim 1

The Examiner rejected the Appellant's claim 1 under 35 U.S.C. § 102(e) as being anticipated by Suito et al. (US Patent No. 6,925,340, hereinafter "Suito"). The rejection is respectfully traversed.

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrik Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1983)). (emphasis added). The Appellant respectfully submits that Suito absolutely fails to teach each and every element of at least the Appellant's claim 1, which specifically recites:

> "A method for audio content playback during video trick mode playback, comprising:
> reading a coded digital data from a storage medium, said coded digital data comprising a video programming and corresponding audio programming;
> decoding from a portion of said digital data comprising said audio programming a plurality of digital audio samples corresponding to a selected portion of the video programming;
> **repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming**; and
> **key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback**." (emphasis added).

With respect to at least claim 1, the Appellant's invention is directed at least in part to a method for playing an audio track during video trick mode playback of a video presentation including reading coded audio programming from a storage medium, decoding the audio programming and key shifting a playback audio pitch associated with the decoded audio to compensate for the trick mode playback.

In support of at least claim 1, the Appellant in the Specification specifically recites:

> "The player 100 can also preferably include a karaoke processor 186 under the control of CPU 122 for performing audio frequency shifting during video trick modes. Karaoke processor 186 receives from audio decoder 184 digital audio corresponding to a selected video performance that is being played. In standard, non-trick playback modes, the karaoke processor can remain inactive and the audio D/A 184 can process digital audio received from the audio decoder 184. When a trick mode playback has been selected, however, the audio D/A can be configured to receive specially processed digital audio from the karaoke processor.
>
> Karaoke processor 186 can comprise any of a number of commercially available processors that are designed to perform conventional karaoke functions, provided however that the karaoke processor preferably provides at least a key control function. In the karaoke context, this feature is commonly used for adjusting the pitch (or audio frequency) of the music to more closely match the pitch of the singer, without changing the tempo of such music. Integrated circuit processors for performing key control functions are well known. For example, devices such as the M65840FP Digital Key Controller, and M65840SP Digital Key Controller are available from Mitsubishi Electric & Electronics USA, Electronic Device Group, 1050 East Arques Avenue, Sunnyvale, CA 94085. Key control processors can operate in the analog or digital domain and either approach can be used with the present invention. Such processors commonly make use of various algorithms and approaches for accomplishing key control." (See Specification, page 4, line 31 through page 5, line 17).

The Appellant, in the Specification further specifically recites:

> "As shown in Figure 3, input audio can be split between high and low pass processing paths established by high pass filter 302 and low pass filter 304. The high pass path processes tempo/beat information whereas the low pass path processes audio voice and accompaniment information. The low pass path is sampled by A/D converter 306 running at a clock rate F_A. Clock rate F_A is preferably at least 10X the highest expected input audio frequency. The sampled low pass frequency components are then placed in a memory storage such as RAM 308. Digital-to-analog converter 310 reads data from RAM 308 at a desired output rate F_B where:
>
> Key shift = $\text{Log}_2 (F_B/F_A)$
>
> For example, if $F_B = 2F_A$, then the pitch is one octave higher. A low pass filter 312 is also provided to remove clock noise and harmonics. A gain

adjust unit can also be provided to produce a desired audio output level." (See Specification, page 5, lines 20-33).

And:

"In step 208, the control CPU 122 can configure the audio decoder 182 to drop audio samples at a rate of every *n* samples. Dropping audio samples in this manner has the advantageous effect of speeding up the audio to match the speed of the video. However, if the remaining audio samples were simply passed to the audio D/A 184 for subsequent conversion to analog format, then the result would be a key shift in the audio by a factor of *n*. This key shift will cause voices to be high pitched and difficult to understand. Accordingly, the digital audio output from the audio decoder 182 can be pre-processed in karaoke processor 186. Accordingly, in step 210, the control CPU advantageously selects the karaoke processor 186 as the input for audio D/A 184. The karaoke processor receives digitized audio from the audio decoder 182 and pre-processes such audio for more natural sound.

In step 212 the control CPU 122 can selectively configure the key control function of karaoke processor 186 to shift the audio key or frequency by 1/*n*. In particular, by utilizing the key control function of the karaoke processor, the key or pitch of the digitized audio can be shifted down by a factor 1/*n* to compensate for the selective elimination of every *n* audio samples in the audio decoder 182. Moreover, since the karaoke processor preferably shifts the audio pitch without altering the tempo or rate of the audio, spoken words associated with the video presentation will be played back more rapidly due to the selective elimination of audio samples but will have a relatively normal pitch." (See Specification, page 7, lines 3-22).

As evident from at least the portions of the Appellant's Specification presented above, in the invention of the Appellant an apparatus and method for audio content playback during video trick mode playback includes repeating or dropping selected digital audio samples at a rate corresponding to a selected trick mode video playback speed of a video programming and key shifting a playback audio pitch associated with the audio samples to compensate for the trick mode playback.

In the Final Office Action, the Examiner alleges that Suito discloses "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video presentation" because Suito discloses that for each processing unit period, sound absence portion(s) of the reproduced sound signal are deleted or partially deleted within a range corresponding to a normal speed reproduction. The Appellant respectfully disagrees.

That is, in contrast to the invention of the Appellant, Suito is directed to a sound reproduction method and sound reproduction apparatus. In Suito, the

invention delimits a sound signal reproduced at a recording medium at a speed higher than a normal speed into successive processing unit periods. For each processing unit period, sound absence portion(s) of the reproduced sound signal are deleted (or partially deleted) within a range corresponding to a normal speed reproduction. Sound presence portions preceding and following the deleted absence portions are joined or compressed to produce a recognizable sound signal.

More specifically, the Appellant respectfully submits that the teachings of Suito for deleting sound absence portion(s) of the reproduced sound signal absolutely fall far short of the teachings and claims of the Appellant's invention for "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video presentation" as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1. That is, the Appellant specifically claims in at least claim 1 repeating or dropping selected digital audio samples and specifically at a rate corresponding to a selected trick mode playback speed. Suito, in contrast, teaches deleting portions of a signal which do not contain audio samples but instead contain the absence of sound or audio samples. In addition, the Appellant specifically teaches and claims in at least claim 1 that the samples are repeated or dropped at a rate corresponding to a selected trick mode video playback speed of the video presentation. In direct contrast to the invention of the Appellant, Suito teaches that sound absence portion(s) of the reproduced sound signal are deleted within a range corresponding to a **normal speed** reproduction. As such, it is very clear that the teachings of Suito for deleting portions of a signal which do not contain audio samples but instead contain the absence of sound or audio samples and deleting the sound absence within a range corresponding to a **normal speed** reproduction absolutely fail to teach, suggest or anticipate at least the Appellant's claim 1, which specifically recites "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video presentation".

Even further, the Appellant submits that there is absolutely no teaching, suggestion or disclosure in Suito for "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1. In the Final Office Action, the Examiner alleges that because Suito teaches that the amplitude of

data signals are suppressed and that video data and sound data is compressed in accordance with a compression coding method and a multiplexing method of the MPEG-2 standard, which the Examiner alleges means that samples are transformed from the time domain to the frequency domain, that this anticipates "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1. The Appellant respectfully disagrees.

More specifically, the Appellant teaches that in one embodiment a key control function of a processor (e.g., a karaoke processor) is used to adjust the key or pitch of the digitized audio (e.g., by a factor $1/n$) to compensate for the selective elimination of every n audio samples in the audio decoder to correspond with a selected trick mode playback. The Appellant teaches that since the processor shifts the audio pitch without altering the tempo or rate of the audio, spoken words associated with the video presentation will be played back, for example, more rapidly due to the selective elimination of audio samples, but will have a relatively normal pitch. There is absolutely no teaching, suggestion or disclosure in Suito for such key shifting. More specifically, as cited by the Examiner, Suito specifically recites:

> "FIG. 3 shows a construction of the amplitude suppression processing section 70. Referring first to FIG. 3, sound data of an output of the MPEG audio decoder 14 described above are inputted as an input sound signal to an input terminal 71 of the amplitude suppression processing section 70. The input sound signal is supplied to a consonant component separation filter 72 and a formant component separation filter 73, and consonant components in the input sound signal are extracted by and outputted from the consonant component separation filter 72. Meanwhile, where the pass-band of the formant component separation filter 73 is set, for example, to 150 to 1,000 Hz, a pitch component and a formant component in the input sound signal are extracted by and outputted from the formant component separation filter 73.
>
> The output of the formant component separation filter 73 is supplied to a level detection section 74, by which the output of the formant component separation filter 73 is, for example, full-wave rectified. A rectification output then is supplied to a low-pass filter whose pass-band is 60 Hz or less, and a level of an output of the low-pass filter is detected thereby to detect a sound level of the input sound signal and thus obtain a level detection value E. Where the sound level is detected only from the pitch component and the formant component in this manner, the resulting level detection value E has a minimized influence of noise." (See Suito, col. 7, lines 22-46).

In contrast to the invention of the Appellant, Suito only teaches a frequency characteristic correction filter which mixes the output of a component separation filter and an amplitude suppression section to time the signals to ensure the proper mixture of the signals. The Appellant respectfully submits that such teachings absolutely fail to teach, suggest or anticipate at least "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1. Furthermore, the Appellant submits that the teachings of Suito that the amplitude of data signals are suppressed and that video data and sound data is compressed in accordance with a compression coding method and a multiplexing method of the MPEG-2 standard as described by the Examiner, also absolutely fails to teach, suggest or anticipate "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1.

As such and for at least the reasons recited above, the Appellant submits that as clearly presented above, the teachings of Suito absolutely fail to teach each and every element of the Appellant's claimed invention and at least claim 1, arranged as in the claim as required for anticipation. As such, the Appellant submits that the Appellant's claim 1 is not anticipated by the teachings of Suito and fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Therefore, the Appellant submits that for at least the reasons recited above, independent claim 1 is not anticipated by the teachings of Suito and, as such, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

B. 35 U.S.C. § 102(e) - Claim 2

Claim 2 depends directly from independent claim 1 and recites further technical features thereof. At least because the teachings of Suito absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 1, the Appellant respectfully submits that dependent claim 2 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that Suito also fails to teach, suggest or anticipate the Appellant's claim 1 further limited by

"generating an audio playback signal corresponding only to a remaining set of said audio samples" as recited in claim 2.

That is, and for at least the same reasons provided in Section A above, at least because Suito fails to teach, suggest or anticipate at least a method and apparatus for playing an audio track during video trick mode playback of a video presentation including at least "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming" and "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, the Appellant respectfully submits that Suito also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 2, which depends directly from independent claim 1.

Therefore, the Appellant submits that claim 2, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

C. 35 U.S.C. § 102(e) - Claim 8

Claim 8 depends directly from independent claim 1 and recites further technical features thereof. At least because the teachings of Suito absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 1, the Appellant respectfully submits that dependent claim 8 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that Suito also fails to teach, suggest or anticipate the Appellant's claim 1 further limited by "wherein said storage medium (102) is selected from a group consisting of a DVD, a magnetic hard disk, magneto optical disk and a video CD" as recited in claim 8.

That is, and for at least the same reasons provided in Section A above, at least because Suito fails to teach, suggest or anticipate at least a method and apparatus for playing an audio track during video trick mode playback of a video presentation including at least "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming" and "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as

taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, the Appellant respectfully submits that Suito also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 8, which depends directly from independent claim 1.

Therefore, the Appellant submits that claim 8, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

D. 35 U.S.C. § 102(e) - Claim 9

Claim 9 depends directly from independent claim 1 and recites further technical features thereof. At least because the teachings of Suito absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 1, the Appellant respectfully submits that dependent claim 9 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that Suito also fails to teach, suggest or anticipate the Appellant's claim 1 further limited by "wherein said coded digital data is an MPEG format and said reading step further comprises decoding (215) an MPEG bit stream to obtain said audio samples" as recited in dependent claim 9.

That is, and for at least the same reasons provided in Section A above, at least because Suito fails to teach, suggest or anticipate at least a method and apparatus for playing an audio track during video trick mode playback of a video presentation including at least "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming" and "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, the Appellant respectfully submits that Suito also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 9, which depends directly from independent claim 1.

Therefore, the Appellant submits that claim 9, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

E. 35 U.S.C. § 102(e) - Claim 10

Claim 10 is an independent claim that recites similar relevant features as recited in the Appellant's independent claim 1. More specifically, claim 10 claims an apparatus for audio signal playback during video trick mode playback including "a decoder for decoding from a portion of said digital data comprising said audio signal a plurality of digital audio samples corresponding to a selected portion of the video signal and for repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video presentation" and "an audio processor for key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback".

As described in Section A above, at least because Suito fails to teach, suggest or anticipate at least a method and apparatus for playing an audio track during video trick mode playback of a video presentation including at least "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming" and "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1 and as similarly claimed in the Appellant's independent claim 10, the Appellant respectfully submits that Suito also fails to teach, suggest or anticipate the Appellant's invention as claimed in independent claim 10, which recites similar relevant features as recited in independent claim 1.

Therefore, the Appellant submits that claim 10, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

F. 35 U.S.C. § 102(e) - Claim 11

Claim 11 depends directly from independent claim 10 and recites further technical features thereof. At least because the teachings of Suito absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 10, the Appellant respectfully submits that dependent claim 11 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that Suito also fails to teach, suggest or anticipate the Appellant's claim 10 further limited by "a

digital to analog converter generating an audio playback signal corresponding only to a remaining set of said audio samples" as recited in claim 11.

That is, and for at least the same reasons provided in Sections A and E above, at least because Suito fails to teach, suggest or anticipate at least a method and apparatus for playing an audio track during video trick mode playback of a video presentation including at least "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming" and "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1 and 10, the Appellant respectfully submits that Suito also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 11, which depends directly from independent claim 10.

Therefore, the Appellant submits that claim 11, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

G. 35 U.S.C. § 102(e) - Claim 17

Claim 17 depends directly from independent claim 10 and recites further technical features thereof. At least because the teachings of Suito absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 10, the Appellant respectfully submits that dependent claim 17 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that Suito also fails to teach, suggest or anticipate the Appellant's claim 10 further limited by "wherein said storage medium is selected from the group consisting of a DVD, a magnetic hard disk, magneto optical and a video CD" as recited in claim 17.

That is, and for at least the same reasons provided in Sections A and E above, at least because Suito fails to teach, suggest or anticipate at least a method and apparatus for playing an audio track during video trick mode playback of a video presentation including at least "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming" and "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as

taught in the Appellant's Specification and claimed in at least the Appellant's claims 1 and 10, the Appellant respectfully submits that Suito also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 17, which depends directly from independent claim 10.

Therefore, the Appellant submits that claim 17, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

H. 35 U.S.C. § 102(e) - Claim 18

Claim 18 depends directly from independent claim 10 and recites further technical features thereof. At least because the teachings of Suito absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 10, the Appellant respectfully submits that dependent claim 18 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that Suito also fails to teach, suggest or anticipate the Appellant's claim 10 further limited by "wherein said coded digital data is arranged in an MPEG format and said storage medium reader decodes an MPEG bit stream to obtain said audio samples" as recited in claim 18.

That is, and for at least the same reasons provided in Sections A and E above, at least because Suito fails to teach, suggest or anticipate at least a method and apparatus for playing an audio track during video trick mode playback of a video presentation including at least "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming" and "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1 and 10, the Appellant respectfully submits that Suito also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 18, which depends directly from independent claim 10.

Therefore, the Appellant submits that claim 18, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

II. THE EXAMINER ERRED IN REJECTING CLAIMS 3-7 AND 12-16 UNDER 35 U.S.C. § 103 BECAUSE THE CITED REFERENCES FAILS TO MAKE OBVIOUS AT LEAST A METHOD AND APPARATUS FOR PLAYING AN AUDIO TRACK DURING VIDEO TRICK MODE PLAYBACK OF A VIDEO PRESENTATION INCLUDING "REPEATING OR DROPPING SELECTED ONES OF SAID DIGITAL AUDIO SAMPLES AT A RATE CORRESPONDING TO A SELECTED TRICK MODE VIDEO PLAYBACK SPEED OF SAID VIDEO PRESENTATION" AND "KEY SHIFTING A PLAYBACK AUDIO PITCH ASSOCIATED WITH SAID AUDIO SAMPLES TO COMPENSATE FOR SAID TRICK MODE PLAYBACK".

A. 35 U.S.C. § 103(a) - Claims 3-7 and 12-16

The Examiner rejected the Appellant's claims 3-7 and 12-16 as being unpatentable over Suito as applied to claims 1 and 10 above, and further in view of Shimura (US Patent No. 6,658,197). The rejection is respectfully traversed.

The Examiner applied the Suito for teaching all of the aspects of the Appellant's claims 1 and 10 but concedes that the Suito fails to teach repeating selected ones of the audio samples at a rate inversely proportional to a selected trick mode video playback speed of said video presentation to produce a trick mode set of audio samples, and generating an audio playback signal corresponding to said trick mode set of said audio samples. However, the Examiner cites Shimura for teaching repeating selected ones of the audio samples at a rate inversely proportional to a selected trick mode video playback speed of said video presentation to produce a trick mode set of audio samples, and generating an audio playback signal corresponding to said trick mode set of said audio samples. The Appellant respectfully disagrees.

Claims 3-7 and 12-16 are dependent claims that depend either directly or indirectly from independent claims 1 and 10, respectively. As described above, the Appellant submits that the teachings of Suito fail to teach, suggest or anticipate the Appellant's claims 1 and 10 for at least the reasons recited above. As such and at least because the teachings of Suito fail to teach, suggest or anticipate the Appellant's claims 1 and 10 for at least the reasons recited above, the Appellant further submits that the teachings of Suito fail to teach, suggest or render obvious

the Appellant's claims 3-7 and 12-16 which depend directly or indirectly from the Appellant's claims 1 and 10, respectively.

Furthermore, the Appellant submits that the teachings of Shimura fail to bridge the substantial gap between the teachings of Suito and the invention of the Appellant. More specifically, the Appellant submits that the teachings of Shimura for an audio signal reproduction apparatus and for reproducing a digital audio signal recorded on a recording medium by a predetermined number of samples, at a recording medium travel speed different from the travel speed during the recording fail to teach, suggest or make obvious a method and apparatus playing an audio track during video trick mode playback of a video presentation including at least "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video presentation" or "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as claimed by the Appellant's independent claims 1 and 10.

That is, Shimura specifically recites:

> "This digital VTR, when reproducing a digital data from the inclined recording track on the magnetic tape, enables a user to select between a normal reproduction mode in which the magnetic tape travels at the same speed as when the digital data was recorded, and a variable reproduction mode (so called jog reproduction mode) in which the magnetic tape travels slower than when the digital data was recorded." (See Shimura, col. 3, lines 34-40).

And

> "Now the user has selected the jog reproduction mode to perform a reduced speed reproduction. The reproduction speed detector 11 detects a current reproduction speed from the VTR reel and FG attached to the capstan and supplies the obtained information to the write/read controller 9, to the pitch variable calculator 10, and to the jog speed command block 12." (See Shimura, col. 5, lines 9-15).

And

> "According to the calculated speed information v and the sample count data n, the total sample count calculator 104 calculates a total number of samples m required for pitch variable processing as follows:
>
> m=n.div.(v.div.100)
>
> and outputs it as the total sample count data. It should be noted that this total sample count m indicates a sample count (n.div.s) required for expressing an audio data of one frame with the same sampling frequency as the sampling frequency during recording when performing lower speed S (S=v.div.100, where S<1) reproduction.

> The interpolation calculator 105, referencing the total sample count data m, calculates an interpolation data based on two adjacent audio data DA samples and inserts the interpolation between the two samples at an identical temporal interval, so as to create a changed reproduction data of total sample count m." (See Shimura, col. 5, line 58 through col. 6, line 8).

And

> "Now, in the pitch variable calculator 10, when the aforementioned digital audio data DA stored in the memory 13 is read out by the address control signal from the write/read controller 9, according to the specified speed of the switching speed specifier 101, the speed information calculator 102 converts the actual speed information from the reproduction speed detector 11, into the calculation speed information as shown in FIG. 4 and determines the period of time for pitch fixed or pitch variable.
>
> In FIG. 4, if .times.1 speed is assumed to be 100, .times.1/2 speed is 50, .times.1/3 is 33, and .times.1/10 is 10. The switching point between the pitch fixed period and the pitch variable period is when the actual speed has become .times.1/3 or below.
>
> In the pitch fixed period, the same pitch as the normal .times.1 is applied, and as the calculated speed, information of 100 is repeated. In the pitch variable period, the actual speed is changed in combination with the aforementioned calculated speed." (See Shimura, col. 6, lines 20-37).

And

> "The digital audio data DA calculated by this pitch variable calculator 10 is sent to the digital signal processor (DSP) 14 and subjected to filtering and other digital processing before supplied to the sampling rate converter (SCR) 15. In the SCR 15, the audio digital data DA from the DSP 14 is rate converted by the sampling clock locked to the output system and output as a digital output from an output terminal 16." (See Shimura, col. 7, lines 5-11).

As clearly evident from at least the portions of the disclosure of Shimura presented above, in Shimura a user can select a jog reproduction mode in which the magnetic tape travels slower than when the digital data was recorded. In contrast to the invention of the Appellant, in Shimura when a jog mode is selected a total sample calculator determines a total sample count data from tape speed information and sample count data. From the total sample count data, an interpolation calculator calculates an interpolation data based on two adjacent audio data samples and inserts the interpolation data between the two samples. Subsequently, a speed information calculator converts actual speed information from a reproduction speed detector into calculation speed information and determines the period of time for pitch fixed or pitch variable. In Shimura, during the pitch variable period, the actual speed is changed in combination with the aforementioned calculated speed.

However, the Appellant respectfully submits that there is absolutely no teaching, suggestion or disclosure in Shimura for at least "repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming" as taught in the Appellant's Specification and claimed by at least the Appellant's claims 1 and 10. That is in contrast to the teachings of Shimura, in the invention of the Appellant selected decoded audio samples are repeated or dropped at a rate corresponding to a selected trick mode video playback speed of the video programming. In the invention of the Appellant, a trick mode video playback speed is used to determine a number of audio samples to add or drop. Shimura does not teach, suggest or anticipate adding or dropping selected decoded audio samples at a rate corresponding to a selected trick mode video playback speed because in Shimura there is no trick mode but an actual reduction in speed of a digital video tape.

Even further, the Appellant respectfully submits that there is absolutely no teaching, suggestion or disclosure in Shimura for at least "key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback" as taught in the Appellant's Specification and claimed by at least the Appellant's claims 1 and 10. That is in contrast to the teachings of Shimura, in the invention of the Appellant a playback audio pitch associated with decoded audio samples are key shifted to compensate for the trick mode playback. In the invention of the Appellant, after audio samples have been added or dropped at a rate corresponding to a selected trick mode video playback speed, the remaining audio samples are key shifted to compensate for the adding or dropping of the audio samples due to the trick mode playback. Shimura does not teach, suggest or anticipate key shifting a playback audio pitch associated with decoded selected audio samples to compensate for a trick mode playback because in Shimura there is no trick mode but an actual slowing down of a video tape. As such, the Appellant submits that the teachings of Suito and Shimura in any combination fail to render obvious the Appellant's claims.

Therefore, the Appellant submits that for at least the reasons recited above, independent claims 1 and 10 are not rendered obvious by the teachings of Suito and Shimura, alone or in any allowable combination, and, as such, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder. As such and at least because the teachings of Suito and Shimura, alone or in any allowable

combination, fail to teach, suggest or render obvious the Appellant's claims 1 and 10 for at least the reasons recited above, the Appellant further submits that the teachings of Suito and Shimura, alone or in any allowable combination, also fail to teach, suggest or render obvious the Appellant's claims 3-7 and 12-16 which depend directly or indirectly from the Appellant's claims 1 and 10, respectively, and, as such, claims 3-7 and 12-16 fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

Conclusion

Thus, the Appellant submits that none of the claims presently in the application are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Consequently, the Appellant believes all these claims are presently in condition for allowance.

For at least the reasons advanced above, the Appellant respectfully urges that the rejection of claims 1-2, 8-11, 17 and 18 as being anticipated under 35 U.S.C. §102 and the rejection of claims 3-7 and 12-16 as being obvious under 35 U.S.C. §103 are improper. Reversal of the rejections in this Appeal is respectfully requested.

Respectfully submitted,

5/30/07
Date

Jorge Tony Villabon,
Attorney for the Appellant
Registration No. 52,322
(609) 734-6445

Patent Operations
Thomson Licensing
P.O. Box 5312
Princeton, New Jersey 08543-5312

CLAIMS APPENDIX

1. (Previously Presented) A method for audio content playback during video trick mode playback, comprising:

reading coded digital data from a storage medium, said coded digital data comprising a video programming and corresponding audio programming;

decoding from a portion of said digital data comprising said audio programming a plurality of digital audio samples corresponding to a selected portion of the video programming;

repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video programming; and

key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback.

2. (Previously Presented) The method according to claim 1, further comprising generating an audio playback signal corresponding only to a remaining set of said audio samples.

3. (Original) The method according to claim 2, wherein said audio samples are dropped at a rate of every n samples, where n is equal to the selected trick mode playback speed relative to a normal playback speed.

4. (Original) The method according to claim 3, wherein said key shifting step further comprises shifting said playback audio pitch by a factor of approximately $1/n$.

5. (Original) The method according to claim 1, further comprising repeating selected ones of said audio samples at a rate inversely proportional to a selected trick mode video playback speed of said video programming to produce a trick mode set of audio samples; and

generating an audio playback signal (217) corresponding to said trick mode set of said audio samples.

6. (Original) The method according to claim 5, wherein said audio samples are repeated 1/n times, where n is equal to the selected trick mode playback speed relative to a normal playback speed.

7. (Original) The method according to claim 6, wherein said key shifting step further comprises shifting said playback audio pitch by a multiplying factor of approximately 1/n.

8. (Original) The method according to claim 1 wherein said storage medium (102) is selected from a group consisting of a DVD, a magnetic hard disk, magneto optical disk and a video CD.

9. (Original) The method according to claim 1, wherein said coded digital data is an MPEG format and said reading step further comprises decoding (215) an MPEG bit stream to obtain said audio samples.

10. (Previously Presented) Apparatus for audio signal playback during video trick mode playback, comprising:

a storage medium reader for reading coded digital data from a storage medium, said coded digital data comprising a video signal and a corresponding audio signal;

a decoder for decoding from a portion of said digital data comprising said audio signal a plurality of digital audio samples corresponding to a selected portion of the video signal and for repeating or dropping selected ones of said digital audio samples at a rate corresponding to a selected trick mode video playback speed of said video presentation; and

an audio processor for key shifting a playback audio pitch associated with said audio samples to compensate for said trick mode playback.

11. (Previously Presented) The apparatus according to claim 10, further comprising a digital to analog converter generating an audio playback signal corresponding only to a remaining set of said audio samples.

12. (Original) The apparatus according to claim 11, wherein said audio samples are dropped at a rate of every n samples, where n is equal to the selected trick mode playback speed relative to a normal playback speed.

13. (Original) The apparatus according to claim 12 wherein said audio processor shifts said playback audio pitch by a factor of approximately 1/n.

14. (Original) The apparatus according to claim 10, wherein said decoder repeats selected ones of said audio samples at a rate inversely proportional to a selected trick mode video playback speed of said video presentation to produce a trick mode set of audio samples; and

a digital to analog converter generating an audio playback signal corresponding to said trick mode set of said audio samples.

15. (Original) The apparatus according to claim 14 wherein said audio samples are repeated 1/n times, where n is equal to the selected trick mode playback speed relative to a normal playback speed.

16. (Original) The apparatus according to claim 15 wherein said audio processor shifts said playback audio pitch by a multiplying factor of approximately 1/n.

17. (Original) The apparatus according to claim 10 wherein said storage medium is selected from the group consisting of a DVD, a magnetic hard disk, magneto optical and a video CD.

18. (Original) The apparatus according to claim 10 wherein said coded digital data is arranged in an MPEG format and said storage medium reader decodes an MPEG bit stream to obtain said audio samples.

EVIDENCE APPENDIX

Appellant asserts that there is no evidence to be submitted in accordance with this section.

RELATED PROCEEDINGS APPENDIX

Appellant asserts that there are no copies of decisions to be submitted in accordance with this section.